

ACCESSION NR: AP4015300

Also, the possibilities of a resettable model are mentioned. "The project was fulfilled in IAT, under B. N. Petrov, in 1960-63." Orig. art.. has: 7 figures and 25 formulas.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 08Aug63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: CG, IE

NO REF SOV: 005

OTHER: 003

Card 2/2

ACCESSION NR: AP4028986

S/0280/64/000/002/0143/0152

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Model-adaptive control system. Part.2.

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1964, 143-152

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive
automatic control

ABSTRACT: Some general characteristics of a model-adaptive system, such as algorithms and laws of coefficient adjustment, are theoretically considered. For a readjustment of coefficients k_1 and k_2 (see authors' article in Izv. AN SSSR. OTN. Tekhnicheskaya kibernetika, 1963, no. 1), these algorithms are plotted and discussed:

$$\begin{aligned} s &= |x_n| - |z|, \\ \dot{s} &= (x_n - z) \operatorname{sign} x_n, \\ \ddot{s} &= (x_n - z) \operatorname{sign} x_{n-1}, \\ \dddot{s} &= (x_n - z) \operatorname{sign} \dot{x}_n. \end{aligned}$$

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ACCESSION NR: AP4028986

Similarly, for coefficients k_2 , these algorithms are plotted:

$$\begin{aligned}e_1 &= |z_n| - |\dot{z}|, \\e_2 &= (\dot{z}_n - \dot{z}) \text{ sign } \dot{z}, \\e_3 &= (z_n - z) \text{ sign } z_n.\end{aligned}$$

A formula for a general law of forming the self-adjusting coefficients is given. Model-adaptive systems are recommended for these cases:-(1) when the plant parameters vary widely and rapidly, in an unknown way; (2) when the nonlinear plant characteristics may result in a loss of stability without self-adapting loops; (3) when the constant-parameter plant would require complicated correcting devices. Orig. art. has: 9 figures and 27 formulas.

ASSOCIATION: none

SUBMITTED: 08Aug63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: IE

NO REF Sov: 003

OTHER: 001

Card 2/2

L 19827-65 ASD(a)-5/AFMD(p)/ESD(dp)

ACCESSION N. I.: AP4048832

S/0280/64/000/005/0130/0143

AUTHOR: Rutkovskiy, V. Yu. (Moscow); Sedorin-Chaykov, V. N. (Moscow)

B

THE: Investigation of the dynamic properties of one class of self-adjusting systems
with pilot signal

SOURCE: AN SSSR. Izv. Tekhnicheskaya kibernetika, no. 5, 1964, 130-143

TOPIC TAGS: automation, self adjusting system, pilot signal, regulating loop

ABSTRACT: A class of systems is investigated whose main loop is described by the equations

$$\begin{aligned} D(p) \dot{\psi} &= -a(t)M(p) \mu + f; \text{ object} \\ N(p) \mu &= kW_{cd}(p) (\psi - g); \text{ regulator} \\ p &\equiv d/dt \end{aligned}$$

where ψ is the controlled coordinate, μ is the regulator coordinate, f and g are the perturbing and regulating signals, $D(p)$ and $M(p)$ are polynomials in p , $W_{cd}(p)$ is the operator of the correcting device and k is the regulator gain. The gain of the object $a(t) > 0$, changes between certain limits a_{\min} and a_{\max} with a bounded velocity $| \dot{a}(t) | \leq \dot{a}_{\max}$. It is assumed

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L 19827-65

ACCESSION NR: AP4048832

that the change in a is sufficiently slow to allow the use of "frozen coefficients" approximation. For a given $\Psi(t)$ the regulation algorithm reduces to

$$a(t)k = \psi_0 = \text{const.}$$

A sinusoidal pilot signal is used to induce oscillations in the system and the amplitude of these oscillations serves as a signal which maintains the amplitude-frequency characteristic of the closed loop system constant. The system is shown in Figure 1 of the Enclosure. The optimum conditions for selection of the frequency of the pilot signal require that it be outside of the band of frequencies of g and f , as well as of the characteristic frequencies of the main loop, and that the induced oscillations be stable with small changes in the coefficients of the polynomials $M(p)$ and $D(p)$. It is shown that for all practical purposes the regulating loop can be analyzed as a separate entity and simplified equations for this loop are derived. A detailed investigation of system dynamics is considered when the gain of the object $a(t)$ is a step function. It is stipulated that this solution can be applied to a step function approximation of any arbitrary $a(t)$. "The authors are grateful to B.N. Petrov who supervised this project." Orig. art. has: 31 equations and 10 figures.

ASSOCIATION: none

Card 2/4

L 19827-55

ACCESS ON NR: AP4048832

PERMITTED: 14Feb64

\O REF SOV: 003

ENCL: 01

SUB CODE: IE, DP

OTHER: 001

O

Card 3/4

L 19827-65

ACCESSION NR: AP4048832

ENCLOSURE: 01

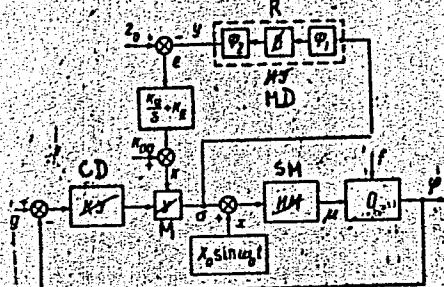


Fig. 1. A self-adjusting closed loop system. O - regulated object, SM - slave mechanism, CD - correcting device, M - multiplier, MD - measuring device, ϕ_1 - selective filter, R - rectifier, ϕ_2 - smoothing filter.

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ACCESSION NR: AP4024680

S/0103/64/025/002/0188/0194

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Dynamics of a first-order model-adaptive system.

SOURCE: Avtomatika i telemekhanika, v. 25, no. 2, 1964, 188-194

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive automatic control, model adaptive control dynamics, model adaptive control stability

ABSTRACT: The effect of error algorithms, the number of resettable coefficients, and their resetting law upon the dynamic processes inside a model-adaptive automatic-control system is theoretically considered. The principal loop of the system is described by a first-order linear equation, and the coefficient-resetting law contains only a term expressing the error between the input signal $g(t)$ and the controlled variable $x(t)$. The model is represented by

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ACCESSION NR: AP4024680

an ideal unit $x_m = g(t)$. It is proved that, under the above conditions, the system is stable with negative self-regulation coefficients b , yet under steady-state conditions, the variation of b introduces an error. Orig. art. has: 9 figures and 24 formulas.

ASSOCIATION: none

SUBMITTED: 12Sep63

DATE ACQ: 15Apr64

ENCL: 00

SUB CODE: CG, IE

NO REF SOV: 002

OTHER: 002

Card 2/2

ACCESSION NR: AP4035072

S/0103/64/025/004/0473/0483

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Effect of the integrals in algorithms of self-adjusting coefficients upon
the dynamics of a model-adaptive system

SOURCE: Avtomatika i telemekhanika, v. 25, no. 4, 1964, 473-483

TOPIC TAGS: automatic control, adaptive automatic control, model adaptive
automatic control, automatic control theoryABSTRACT: In the general case, the model-adaptive automatic-control system
can be described by:

$$\text{plant: } T\dot{\varphi} + B\varphi = \delta$$

$$\text{controller: } \delta = K_g g - K_1 \varphi$$

$$K_g = 1 + K_{gu} \int (g - a\varphi) \operatorname{sign} g dt + K_{gu} (g - a\varphi) \operatorname{sign} g,$$

$$K_1 = a - K_{iu} \int (g - a\varphi) \operatorname{sign} \varphi dt - K_{iu} (g - a\varphi) \operatorname{sign} \varphi.$$

where $T, B, K_{gu}, K_{gu}, K_{iu}, K_{iu}, a$ are constants, "a" being a specified static

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ACCESSION NR: AP4035072

relation between g and φ . The effect of the integrals in the formulas of self-adjusting coefficients in the feedback loop K_1 , and controlling signal K_g , upon the operation of the system is considered. It is shown that to maintain a specified relation between the input signal and the output coordinate under steady-state conditions with zero error, the algorithm of K_1 , should contain the integral. That makes the system stable at any value of the self-regulation coefficient. Transient processes can be improved by introducing the terms $K_{11}^*(g - a\varphi)\text{sign } \varphi$ and $K_g(g - a\varphi)\text{sign } g$ into the algorithms of K_1 , and K_g , respectively. No introduction of the integral into K_g is recommended. In the case of a system operating with $g(t) = 0$, the integrals should not be introduced into the algorithms of K_1 , and K_g . Orig. art. has: 9 figures and 35 formulas.

ASSOCIATION: none

SUBMITTED: 12Sep63

DATE ACQ: 26May64

ENCL: 00

SUB CODE: IE

NO REF SOV: 003

OTHER: 001

Card 2/2

ACCESSION NR: AP4041464

5/0103/64/025/006/0887/0895

AUTHOR: Krutova, I. N.; Rutkovskiy, V. Yu. (Moscow)

TITLE: Investigation of the dynamics of a model-adaptive system, with nonlinear
and variable-parameter plants

SOURCE: Avtomatika i telemekhanika, v. 25, no. 6, 1964, 887-895

TOPIC TAGS: automatic control, automatic control system, adaptive automatic
control, automatic control theoryABSTRACT: These two problems of nonadaptive control are theoretically
considered: (1) The plant is a first-order unit with a nonlinear static characteris-
tic which causes system instability; (2) The self-regulation coefficient varies in
time taking on plus and minus values which also impairs stability. Upon intro-
ducing the model-adaptive control, the system motion in the first problem is $T\dot{\varphi} + f(\varphi)\varphi = \delta$ — plant
described by: $\delta = K_1 g - K_2 \varphi$ — controller

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ACCESSION NR: AP4041464

$$K_g = 1 + K_{g0} \int (g - \varphi) \operatorname{sign} g dt + K_{g1} (g - \varphi) \operatorname{sign} g,$$

where

$$K_1 = 1 - K_{10} \int (g - \varphi) \operatorname{sign} \varphi dt - K_{11} (g - \varphi) \operatorname{sign} \varphi.$$

The introduction of error components into K_g and K_1 tends to increase the system stability and to improve the quality of the transient response. In the second problem, the system is described by:

$$\begin{aligned} T\dot{\varphi} + b(t)\varphi &= \delta, \\ \delta &= K_g g - K_1 \varphi, \end{aligned}$$

$$K_g = K_{g0} + K_{g1} \int (g - \varphi) \operatorname{sign} g dt + K_{g2} (g - \varphi) \operatorname{sign} g,$$

$$K_1 = K_{10} - K_{11} \int (g - \varphi) \operatorname{sign} \varphi dt + K_{12} (g - \varphi) \operatorname{sign} \varphi.$$

In this case, too, the model-adaptive feature brings about better stability and transient response. Orig. art. has: 11 figures and 20 formulas.

Card 2/3

11087-65 EWT(d)/EPF(n)-2/EPF(l) po-4/Pq-4/Pg-4/Pae-2/Pu-4/Pk-4/p1-4
IJP(c) WW/BC

ACCESSION NR: AP5003972

S/0103/65/026/001/0073/0087

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Investigation of a second-order model-adaptive system

SOURCE: Avtomatika i telemekhanika, v. 26, no. 1, 1965, 73-87

TOPIC TAGS: model adaptive automatic control, automatic control, automatic control design, automatic control system, automatic control theory

ABSTRACT: A qualitative investigation is presented of a self-adaptive automatic control system describable by a second-order differential equation (with fixed coefficients of the plant), with no integral terms in the resettable coefficients, and with a perfect model. The investigation uses the method of phase plane. Although no formula for phase trajectories is derived — only a field of directions is plotted by means of isoclinic lines — these conclusions have been reached:
(1) The control system is workable with any plant parameters; (2) The

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L 31087-65

ACCESSION NR: AP5003972

equilibrium condition is stable with positive and unstable with negative damping in the system; in the latter case, there is one limit cycle whose parameters depend on the parameters of the self-adapting loops; (3) With constant coefficients of the plant, the model can be regarded as a very efficient device in complex automatic-control systems Orig. art. has: 11 figures and 37 formulas.

ASSOCIATION: none

SUBMITTED: 06Nov63

ENCL: 00

SUB CODE: IE

NO REF SOV: 005

OTHER: 001

Card 2/2

L-41413-65 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(l) Po-4/Pq-4/Pf-4/Pg-4/
Page-2/Pu-4/Pk-4/P1-4 IJP(c) WW/EC
ACCESSION NR: AP5006273 S/0103/65/026/002/0223/0234 60
B

AUTHOR: Krutova, I. N. (Moscow); Rutkovsky, V. Yu. (Moscow)

TITLE: Selecting parameters for a model-adaptive control system 9

SOURCE: Avtomatika i telemekhanika, v. 26, no. 2, 1965, 223-234

TOPIC: AGS: model adaptive control system, automatic control, automatic control design, automatic control system, automatic control theory

ABSTRACT: This is a further development of an earlier authors' work (Avt. i telemekhanika, v. 26, no. 1, 1965); the dynamics of the same second-order model-adaptive system (MAS) is considered but with integral terms in the adaptive-loop coefficients and with variable parameters of the system. As the MAS describable by essentially nonlinear equations practically does not lend itself to general analytical treatment, only the particular problem is considered in which the plant self-equalization coefficient varies by a factor of 5 during the

Card 1/2

L 41413-65
ACCESSION NR: AP5006273

transient-process time. A study of the latter particular problem shows that:
(1) The relay functions should be introduced into the error algorithms to prevent any undue increase in the integral terms when the controlling variable g is small or when $g = g_0 = \text{const.}$; (2) The integral term should not be introduced into the coefficient of the controlling variable; (3) With variable system parameters, such adaptive-loop coefficients can be selected that the transient process will remain invariant to wide-range changes of plant parameters. Orig. art. has: 7 figures and 31 formulas.

ASSOCIATION: none

SUBMITTED: 04Nov63

ENCL: 00

SUB CODE: IE, DP

NO REF SOV: 005

OTHER: 002

me
Card 2/2

L 48960-65
/Pk-4/P1-4
ACCESSION NR: AP5011907

EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(l) Po-4/Pq-4/Pac-2/Pu-
IJP(c) WW/BC
UR/0103/65/026/004/0642/0653

50
B

AUTHOR: Rutkovskiy, V. Yu. (Moscow)

TITLE: Transient responses in nonsearching adaptive systems with a model during slow control action

SOURCE: Avtomatika i telemekhanika, v. 26, no. 4, 1965, 642-653

TOPIC TAGS: nonsearching adaptive system, transient control process, nonlinear variable parameter control, adpative model containing control

ABSTRACT: Nonsearching adaptive systems with a model are described under certain idealized conditions by equations with constant coefficients. However, in the general case when the object's parameters are variable, the motion of such systems is described by nonlinear equations with variable coefficients. Consequently, one must study the dynamics of the system taking into account the changes in the coefficients and the nonlinearity introduced by the adaptation circuits. The general solution of the problem is not attainable yet; consequently, the author evaluates only the first term of the asymptotic expansion (the modeling of appropriate systems showed that the first term is quite sufficient for application in practice). He pays special attention to transient processes in nonsearching

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L 48960-65

ACCESSION NR: AP5011907

adaptive systems with a model during slow control action and slowly varying object parameters (I. N. Krutova, V. Yu. Rutkovskiy, *Tekhnicheskaya kibernetika*, no. 1 and 2, 1962) and carries out the investigation by means of harmonic linearization developed for the study of transient processes in nonlinear systems by Ye. P. Popov (*Nekotoryye voprosy sinteza nelineynykh sistem avtomaticheskogo upravleniya*, Tr. I Mezhdunar. kongr. Mezhdunar. feder. po avtomat. upravl., v. 1, Izd-vo AN SSSR, 1961). The paper presents a method for the calculation of transient processes and establishes relationships between the quality indexes and the parameters of the adaptation circuits. These transient processes depend on the type of control interaction and systems turn out to be stable only within a limited region of initial values of the integral term within the adjustment coefficient of the regulator. According to the calculated example, all results seem to remain valid even for rates of change of the object's coefficients comparable to the speed of the transient process. Orig. art. has: 38 formulas and 8 figures.

ASSOCIATION: None

SUBMITTED: 05Jun64

NO REF SOV: 007

ENCL: 00

SUB CODE: IE

OTHER: 000

Card 2/2

L 57121-65 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(1) Po-4/Pq-4/Pf-4/
Pg-4/Pae-2/Pu-4/Pk-4/P1-4 LJP(c) Ww/BC

ACCESSION NR: AP5010568

UR/0020/65/161/003/0544/0546

G3

62

B

AUTHOR: Petrov, B. N. (Academician); Rutkovskiy, V. Yu.

TITLE: Invariance of nonsearch model-adaptive systems

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 544-546

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory, model adaptive system

ABSTRACT: The article proves mathematically that, in a nonsearch model-adaptive system, under certain conditions, the error between the output variables of the system and those of the model is invariant with respect to the actuating signal. A system describable by these equations is considered:

$$\text{plant: } \sum_{n=0}^k a_n(t) \psi^{(n)} = -b^*(t) \mu$$

$$\text{controller: } \sum_{n=0}^m c_n \mu^{(n)} = \sigma$$

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L 57121-65

ACCESSION NR: AP5010568

$$\text{control law: } \sigma = k_b \left(\sum_{i=0}^{n-1} k_i \varphi^{(i)} - k_{\text{sat}} \right)$$

adaptive-coefficients law:

$$k_t = \bar{k}_t + k_{t,u}, z_t, z_t = \int_0^t (\varphi^{(i)} - \varphi_m^{(i)}) \Phi(\varphi_m^{(i)}) \operatorname{sign} \varphi^{(i)} dt$$

$$\text{nonlinear function: } \Phi(\varphi_m^{(i)}) = \begin{cases} 1 & \text{with } |\varphi_m^{(i)}| > \Delta_i \\ 0 & \text{with } |\varphi_m^{(i)}| \leq \Delta_i \end{cases}$$

$$\text{model: } \sum_{i=0}^n d_i m_m^{(i)} = p,$$

The necessary and sufficient condition of invariance is found to be:

$$d_n = \frac{1}{x k_{m0}}, \quad \tilde{z}_t = \frac{x k_{m0} - x k_t - a_t}{x k_{tu}},$$

where $x = k_b b^* / c_r a_k^*$; a_i are the coefficients of a certain polynomial.This invariance condition can be achieved by using a special loop for adapting the total gain k_b of the controller. Orig. art. has: 22 formulas.

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L 57121-65

ACCESSION NR: AP5010568

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 25Dec64

ENCL: 00

SUB CODE: DP, IE

NO REF SOV: 003

OTHER: 000

182

Card 3/3

I 15219-66 EWT(1)/EWP(m)/EWA(d)/ES(v)-3 CW
 ACC NR: AP5026046

SOURCE CODE: UR/0293/65/003/005/0677/0683

AUTHORS: Popov, V. I.; Rutkovskiy, V. Yu.

ORG: none

TITLE: Study of plane flexural oscillations of a gravitationally stable satellite-stabilizer system

v2,44

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 677-683

TOPIC TAGS: oscillation, artificial satellite, spacecraft stabilizer, vibration damping, Lagrange equation, motion equation, differential equation system

ABSTRACT: Equations of the plane flexural oscillations of a satellite-stabilizer system are derived in order to study the orbital motion of a satellite with exposed rods. Figure 1 shows the kinematics of motion of the satellite-stabilizer system. The differential equations of motion of the system are:

$$\left[I_0 + mna^2 + mhl^2 + 2al \sum_{i=1}^n \cos \psi_i \right] \ddot{\phi} - 2mal\dot{\phi} \sum_{i=1}^n \sin \psi_i \dot{\psi}_i - m \sum_{i=1}^n (l^2 + al \cos \psi_i) \ddot{\psi}_i + mal \sum_{i=1}^n \sin \psi_i \dot{\psi}_i^2 = -M_\phi,$$

$$ml^2 \ddot{\psi}_i - m(l^2 + al \cos \psi_i) \ddot{\phi} + mal \dot{\phi}^2 \sin \psi_i + \frac{3EI}{l} \psi_i = -M_{\psi_i}$$

Card 1/3

(i = 1, 2, ..., n),

UDC: 629.191:531.352

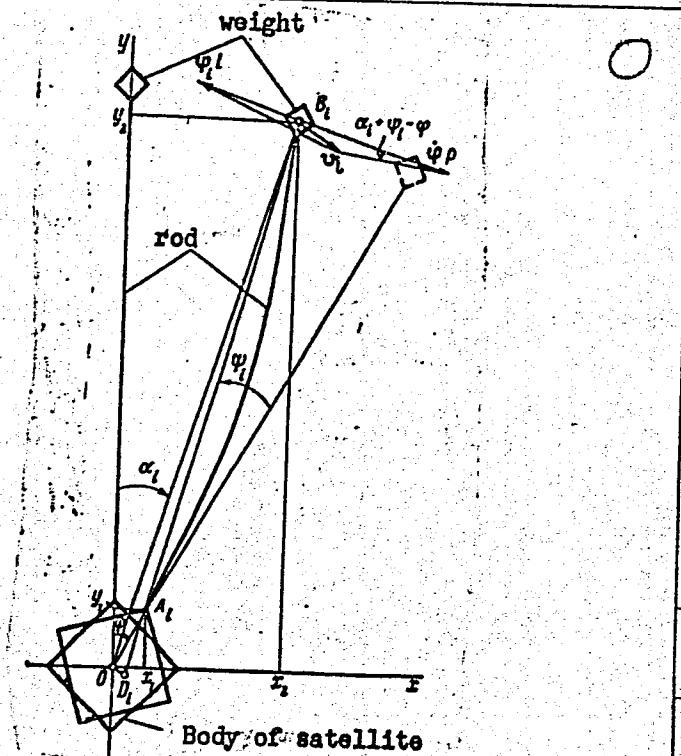
63

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L 15219-66

ACC NR: AP5026046

Fig. 1. Kinematics of motion of satellite-stabilizer system.



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L 15219-66

ACC NR: AP5026046

where I_c is the moment of inertia of the satellite, E is modulus of elasticity, M_ϕ the control moment of the predamping system, M_{ψ_1} the moment of internal friction

in the material of the i -th rod, l is rod length, and m is the mass of the weights. A study of perturbations after deployment of the rods shows that the deployment should be done radially, so as not to create perturbing moments. The system of differential equations of motion is studied analytically after employing certain simplifications. Comparison of the results of numerical calculation with the analytic solution of the simplified equations showed that the oscillation frequencies and amplitudes of the satellite and a stabilizer agreed for all practical purposes. Orig. art. has: 1 diagram and 7 formulas.

SUB CODE: 22 SUBM DATE: 19Feb65/ SOV REF: 007/ OTH REF: 002

TS
Card 3/3

L 42946-66 ENT(d)/EWP(v)/EWF(s)/EWP(h)/EWP(1) GD/BC
ACC NR: AT6017608 (N) SOURCE CODE: UR/0000/65/000/000/0046/0063

AUTHOR: Rutkovskiy, V. Yu. (Candidate of technical sciences); Krutova, I. N. (Candidate of technical sciences)

ORG: none

TITLE: Construction principles and certain theoretical problems for one class of adaptive systems with a reference model

SOURCE: Vsesoyuznaya konferentsiya po teorii i praktike samonastraivayushchikhsya sistem. 1st, 1963. Samonastraivayushchiyesa sistemy (Adaptive control systems); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 46-63

TOPIC TAGS: self adaptive control, nonlinear automatic control, nonlinear control system, control theory

ABSTRACT: The authors describe the analysis and design of a non-search adaptive control system utilizing a reference model. In such a system the transient processes of the controlled object and the model are continuously compared in a differential circuit and the appropriate coefficients in the regulator are adjusted to maintain a certain value of the difference $\phi_M - \phi$, where ϕ_M is the variable parameter of the model and ϕ is the corresponding controlled parameter of the object. It is assumed that all changes in the reference (model) parameters, as well as independent parameter varia-

Card 1/2

L 42946-56

ACC NR: AT6017608

tions in the controlled object (noise) are functions of time. Under these conditions it is possible to adjust the coefficients k_i such that the system remains functional and noiseproof over a large range of parameter variations. Another advantage of the described system over the conventional search-type control system is the higher response speed possible within the stable region of operation. The selection of the model's transient processes with respect to the constraints of the real object solves the problem of optimization of the whole system. This and the choice of the appropriate coefficients, to be adjusted in the regulator, leads to the optimum design of a control system in which the performance of the controlled object will follow closely and rapidly that of the model over a wide range of disturbances and parameter variations, not possible with the conventional systems. Orig. art. has: 14 figures, 33 formulas.

SUB CODE: 09/
13/ SUBM DATE: 22Nov65/ ORIG REF: 007/ OTH REF: 003

Card 2/2 MLP

L 46027-66 EWP(k)/EWT(d)/EWP(h)/EWP(l)/EWP(v) EC/GD

ACC NR: AT6017611

(N)

SOURCE CODE: UR/0000/65/000/000/0093/0111

AUTHOR: Rutkovskiy, V. Yu. (Candidate of technical sciences); Ssorin-Chaykov, V. N.

ORG: none

TITLE: Self-adaptive systems with a test signalSOURCE: Vsesoyuznaya konferentsiya po teorii i praktike samonastraivayushchikhsya sistem. 1st, 1963. Samonastraivayushchiyesya sistemy (Adaptive control systems); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 93-111

TOPIC TAGS: self adaptive control, automatic control circuit

ABSTRACT: A class of adaptive control systems controlled by a sinusoidal test signal is considered. The test signal is fed into the input of the system. The overall transfer function depends on the amplitude and frequency of this test signal. A general expression for the transfer function is developed and it is shown that for a certain test signal it may be kept constant. A detailed dynamic analysis, and methods of synthesis of a control system, working on this principle together with some calculated results are presented. In the analysis of the system, the methods of Ye. P. Popov and L. A. Zadeh are used and recommended by the authors. Orig. art. has: 41 formulas, 14 figures.

SUB CODE: 13/

SUBM DATE: 22Nov65/

ORIG REF: 008/

OTH REF: 003

Card 111 Gde

L 06393-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)

ACC NR: AP6010282

SOURCE CODE: UR/0103/66/000/003/0070/0077

X3
B

AUTHOR: Zemlyakov, S. D. (Moscow); Rutkovskiy, V. Yu. (Moscow)

ORG: none

TITLE: Synthesis of an adaptive control system with a reference model

SOURCE: Avtomatika i telemekhanika, no. 3, 1966, 70-77

TOPIC TAGS: self adaptive control, automatic control theory

ABSTRACT: A generalized adaptive control system defined by a nonlinear differential equation with variable coefficients is analyzed. The analysis emphasizes the improvement of the nonsensitivity of the system to a variation in its parameters. A filter, also defined by a differential equation, was adopted as a reference model. Lyapunov's direct method was used to synthesize the readjustment algorithms of the regulator's coefficients. In certain ranges, the coefficients of the closed-loop system of the main circuit deviate from the coefficients of the reference model. In those deviation ranges, the relay components provide for an asymptotic approximation of the motion of the main circuit to the motion of the reference model. A sliding regime is provided in a certain region of the phase space of the mismatch error and of its derivatives. The solution which satisfies the stability conditions is asymptotically stable in the whole.

Orig. art. has: 50 formulas.

SUB CODE: 13, 21, 09/ SUBM DATE: 20Jan65/ ORIG REF: 007/ OTH REF: 003

UDC: 62-506

Card 1/1 Hh

KRUTOVA, T.N. (Moskva); KUTKOVSKIY, V.Yu. (Moskva)

Decrease of sensitivity to the change of parameters in an adaptive control system with an analog computer. Izv. AN SSSR. Tekh. kib. no.4:134-147 Jl-Ag '65. (MIRA 18:11)

L 1390-66 EWP(v)/EWP(k)/EWP(h)/EWP(l')/EWT(d)

ACCESSION NR: AP5021856

UR/0280/65/000/004/0134/0147

4L
B

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: The reduction in parameter-variation sensitivity of an adaptable system with a model

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1965, 134-147

TOPIC TAGS: adaptive control, automatic control system, control system design, automatic control stability

ABSTRACT: The authors described in an earlier paper an adaptable system with a model-standard containing several adjustment parameters. They found that one can augment the degree of stability of such a system against wide variations of the parameters by retuning in the feed-back loops the coefficients with the object's output coordinate and its derivative as a function of the differences between the coordinates of the model and the system. In such a case, each coefficient contains a multiplicative factor which complicates the circuit. The present paper investigates a system containing a model-standard in which the tuning is carried out using a single amplification coefficient K_0 of the regulator (the sensitivity problem). The dynamics of the system is analyzed using the principle of harmonic balance.

Card 1/2

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Card 2/2

L 63605-65 EWT(d)/ENP(1) Po-4/Pan-4/Rg-4/Pkm-4/P1-4 13P(c) BC

UR/0280/65/000/003/0148/0156

ACCESSION NR: AP5016978

AUTHOR: Krutova, I. N. (Moscow); Rutkovskiy, V. Yu. (Moscow)

TITLE: Self-oscillation and stability during constant control of a class of adaptive systems with models

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 3, 1965, 148-156

TOPIC TAGS: adaptive system, control system stability, control system self-oscillation, harmonic balance method, control model

ABSTRACT: The self oscillations in adaptive systems with models (I. N. Krutova, V. Yu. Rutkovskiy, Izv. AN SSSR, Tekhnicheskaya kibernetika, 1964, no. 1, 2) are studied by the method of harmonic balance for the cases of constant object parameters and a constant control interaction. The harmonic balance approach is treated from the viewpoint of D-separation. The results of the study show that the adaptive systems with models exhibit numerous properties of linear systems. In particular, the stability problem may be solved by analysis of linearized equations whenever the system has only one stable limiting cycle. On the other hand, the method of harmonic balance permits the study even of systems whose linear portion is unstable. One can also determine the number of

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ACCESSION NR: AP5016978

limiting cycles of the above-mentioned adaptive systems, their stability, and their self-oscillation parameters. The stability of the class of systems does not depend on the self-compensation coefficient nor on the amplification of the regulator. Procedures for the choice of adaptation circuit parameters are also given. Orig. art. has: 39 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 14Feb64

ENCL: 00

SUB CODE: IE, MA

NO REF SOV: 005

OTHER: P00

llc
Card 2/2

KRUTOVA, I.N. (Moskva); RUTKOVSKIY, V.Yu. (Moskva)

Study of a second-order adaptive system with a model. Avtom. i
telem. 26 no.1:73-87 Ja '65. (MIRA 18:4)

RUTKOVSKIY, V.Yu. (Moskva)

TRANSIENT PROCESSES IN NON-SEPARABLE TYPE ADAPTIVE SYSTEMS WITH A
model and slowly varying control action. Avtom. i telem., 26
no.4:642-653 Ap '65. (MIRA 18:6)

L 52263-65
ACCESSION NR: AP5010822

UR/0020/65/161/004/0789/0790

17
B

AUTHOR: Petrov, B. N. (Academician); Rutkovskiy, V. Yu.

TITLE: Double invariance of the automatic-control systems

SOURCE: AN SSSR. Doklady, v. 161, no. 4, 1965, 789-790

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory

ABSTRACT: An automatic-control system possesses a "double invariance" if the invariance conditions with respect to the input variables $f_i(t)$ are also the invariance conditions of the operator $A(D, t)$ with respect to the plant parameters; i. e., the independence of the operator $A(D, t)$ of the plant parameters is corollary of the invariance conditions with respect to $f_i(t)$. Hence, the system has zero sensitivity to the plant parameters. It is proven that the nonsearch model-adaptive systems are double-invariant when the plant parameters, after they have gone through arbitrary variations, become constant. Orig. art. has: 10 formulas.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 25Dec64

ENCL: 00

SUB CODE: MA, IE

Card 1/17.0

NO REF SOV: 005

OTHER: 000

RUTKOWSKI, Antonin

Nutritive value of rape oil and rape grants. Prus potraviny 19
no.5:219-221 My '64.

1. Chair of Food and Canning Technology, Higher School of Agriculture, Olsztyn, Poland.

KRUTOVA, I.N. (Moskva); RUTKOVSKIY, V.Yu. (Moskva)

Effect of integrals in laws governing changeable coefficients on the dynamics of a self-adoptive control system with a model. Avtom. i telem. 25 no.4:473-483 Mr 'o4.
(MIRA 17:6)

"APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7

KRUTOVA, I.N. (Moskva), RUTKOVSKIY, V.Yu. (Moskva)

Adaptive control system with a model. Part 2. Izv. AN SSSR
Tekh. kib., no.2:143-152 Mr-Ap'64. (MIRAN 1735)

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7"

RUTKOVSKIY, V. YU.

"The Theory of the Simplest Servomechanisms With Two Lagging Relays," V. V. Petrov and V. Yu. Rutkovskiy, Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh nauk, No 2, Feb 57, pp 59-71

This is a continuation of an article in an earlier issue (No 4, 1956) of the same periodical and is devoted to the development of the theory of automatic control systems and servomechanisms with certain nonlinear elements and lagging. It is shown that the presence in the systems of two lagging relay elements permits a more complete calculation of the effective nonlinearity in various systems, and that the theory of such systems provides for their dynamics a calculation, the results of which approach practical values. (U)

S4M.1374

RUTKOVSKIY, Ya.P., agronom-inspektor

Dodder retreats. Zashch. rast. ot vred. i bol. 9 no.5:51 '64
(MIRA 17:6)

1. Daugavpilsskiy karantinnyy punkt.

RUTKOVSKIY, Yu.

Experience in long-distance television reception. Radio
no. 6:47-48 Je '62. (MIRA 15:5)
(Television—Receivers and reception)

"APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7

RUTKOVSKIY, Yu. (Poltava)

Test results of a wide-band antenna. Radio no.6:22 Je '60.
(MIRA 13:7)
(Television--Antennas)

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7"

RUTKOVSKIY, Yu. (Poltava)

Television set for the reception of long-distance signals.
Radio no.1:37 Ja '60. (MIRA 13:5)
(Television-~~Receivers~~ and reception)

RUTKOVSKIY, Yu. (Poltava)

Reception of two television programs using antennas with a common
feeder. Radio no.9:44 S '60. (MIRA 13:10)
(Television--Antennas)

GOGIN, Yu.N., kand.tekhn.nauk; RUTKOVSKIY, Yu.A., inzh.

Effect of an intake pipeline on the operation of a piston-type
compressor. Prom. energ. 18 no.9:23-27 S '63. (MIRA 16:10)

RUTKOVSKIY, Yu.A., inzh.; GOGIN, Yu.N., kand. tekhn. nauk

Effect of the dimensions of the intake pipe on the operation of piston compressors. Prom. energ. 20 no.5:18-22 My '65. (MIRA 18:7)

KIRONOV, V.Ye.; RUTKOVSKIY, Yu.I.; IGNATENKO, Ye.I.

Bromide complexes of zinc. Zhur.neorg.Khim. 10 no.12:
2639-2647 D '65. (MIRA 1971)

MIRONOV, V.Ye., RUTKOVSKIY, Yu.I.

Thiocyanate complexes of trivalent iron. Zhur.neorg.khim.
10 no.12:2670-2674 D '65. (MIRA 19:1)

MIRONOV, V.Ye.; RUTKOVSKIY, Yu.I.

Distribution of iron (III) between aqueous solutions of salts and ether. Zhur. neorg. khim. 10 no.5:1069-1074 My '65.
(MIRA 18:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta,
kafedra neorganicheskoy khimii.

1/1

POLAND

RUTKOWIAK, Bohdan, City Seashore Zoological Garden (Miejski Ogród Zoologiczny Wybrzeża) Director Pharmacist (Dyrektor Magister) M. Massalski, Station for Small Animals (Przychodnia dla Zwierząt Małych) Head (Kierownik) Dr. B. Rutkowiak, Gdańsk-Oliwie

"Observations on "Rodentiosis" [Infection with *Bacterium pseudotuberculosis* rodentium Pfeiffer] in Monkeys"

Lublin, Medycyna Weterynaryjna, Vol 22, No 9, Sep 1966; p. 525-528

Abstract: Outbreak of this type of pasteurellosis in 2 monkey houses, housing 40 and 10 head respectively, September to December 1965; despite immediate pragmatic treatment with chloramphenicol and sulfonamides 13 deaths occurred during such therapy; In vitro sensitivity tests then revealed exclusive sensitivity to penicillin, use of which brought cessation of the epizootic.
Table; 1 German, 6 Polish references.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210006-7"

RUTKOWIAK, Bohdan, Lek. wet., Director of the State Animal Hospital (Państwowy Zakład Lecniczy dla Zwierząt) in Gdańsk.

"A Case of Caesarian Section in a Mare."

Karsar-Lublin, Medycyna Weterynaryjna, Vol 13, No 11, Nov 62, pg 679-680.

Abstract: A case is described for a caesarian section in a mare without any post-operative complications, following pre-operative antibiotic treatment and blocking of the sympathetic nervous system. Two Soviet references.

1/1

SIEROCKA, Michalina; RUTKOWNA, Elzbieta

The process of purification of ferric hydroxide sol with mixed ionites.
Rocznik chemii 34 no.2:697-706 '60. (EEAI 10:1)

1. Katedra Chemii Fizycznej Uniwersytetu M. Kopernika, Torun
(Iron hydroxides) (Ion exchange)
(Gums and resins, Synthetic)

KURZEPA, Stanislaw; RUTKOWSKA, Alina

Pharmacodynamic reactive changes related to the developmental stage.
Studies on the drop of temperature in young and mature rats under the
influence of increasing doses of pyramidon. Acta physiol. polon. 13
no.2:301-306 '62.

1. Zakladu Farmakologii Instytutu Matki i Dziecka w Warszawie p.o.
Kierownika: dr St. Kurzepa Dyrektor: prof. dr B. Gornicki.
(AGING) (BODY TEMPERATURE pharmacol)
(AMINOPYRINE pharmacol)

KURZEPKA, Stanislaw; RUTKOWSKA, Alina

Pharmacodynamic reactivity changes in relation to the stage of development. I. Studies on the effect of pyramidon on brain tissue respiration in young and adult rats. Acta physiol. Pol. 13 no.1:167-175 '62.

1. Z Zakladu Farmakologii Instytutu Matki i Dziecka w Warszawie P.o.
Kierownika: dr St. Kurzepa Dyrektor: prof. dr F. Groer.

(AMINOPYRINE pharmacol) (BRAIN pharmacol)
(AGING)

RUTKOWSKA, F., mgr inż.

Terminology in semiconductor electronics. Wiad elektrotechn 30
no.5:183 My '62.

RUTKOWSKA, Filomena, mgr inz.

Products of the Tewa Semi-Conductor Works. Wiad elektrotechn 30
no.5:161-163 My '62.

RUTKOWSKA, Filomena; OWCZAREK, Bogumil

Transistors of the TG-50 and TG-52 type produced by the TEWA
Transistor Plant. Przegl elektronika 2 no.3:245-249 Jl '61.

"APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7

RUTKOWSKA, F.

Semiconductive parts produced by Tewa Semiconductors Works.
Wiad elektrotechn 3I no.480-81 Ap '68.

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7"

RUTKOWSKI, W., doc. dr inż.; RUTKOWSKA, H., mgr inż.; HANDZLIK, J., mgr inż.

Certain physical properties of sintered iron of particularly
large ferrite grains obtained by adding phosphorus. Hutnik P
29 no.6:213-218 Je '62.

POCZTARSKA-WEGRZYN, I.; PRZYJALKOWSKI, Z.; RUTKOWSKA, M.

Effect of pharmacological hibernation on the development of *Trypanosoma equiperdum* (Doflein 1901) in rats. *Acta parasit Pol* 9 no.10/21:161-167 '61.

1. Department of Parasitology, Polish Academy of Sciences. Head:
Stefanski, Witold, prof., dr.

KISIELOW, Włodzimierz; RUTKOWSKA, Maria

Properties of the natural oil at Rybaki I. Przegl geol 10
no.9:473-475 S '62.

1. Katedra Technologii Nafty i Paliw Plynnych, Politechnika,
Gliwice.

"APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7

PUTY, M. L., Minja

RE: [REDACTED] COMMUNIST PARTY OF THE SOVIET UNION
[REDACTED] PARAPHRASED BY [REDACTED]

[REDACTED] TAXED AND APPRAISED AS UNCLASSIFIED BY [REDACTED]

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7"

KISIELOW, Włodzimierz, prof., dr., inż.; RUTKOWSKA, Marta, mgr., inż.

Properties of crude oil from newly opened oil fields in the
Mielec and Węglowka districts. Nafta Pol 17 no. 7:198-203 '61.

1.Katedra Technologii Nafty i Paliw Płynnych, Politechnika
Śląska, Zakład Syntezy Organicznej Polskiej Akademii Nauk.

KISIELOW, Włodzimierz; GROCHOWSKA, M.; RUTKOWSKA, M.

Deparaffinization of petroleum with carbamide. Pts. 1-2. Chemia
stosow 6 no.3:455-474 '62.

1. Katedra Technologii Nafty i Paliw Plynnych, Politechnika, Gliwice,
i Pracownia nr 7 Zakladu Syntezy Organicznej, Polska Akademia Nauk,
Gliwice.

RUTKOWSKA, Urszula; WOJSA, Kazimiera

Determination of the reserpine and total alkaloid in the radix
of Rauwolfiae serpentinae and in pharmaceutical preparations.
Inst przem ziel Biul 9 no. 4:192-200 D '63.

1. Department of Analysis and Testing, Industrial Institute of
Herbs, Poznan. Head of department: Dr. H.Czonkowska.

KACZMAREK, Feliks, dr; RUTKOWSKA, Urszula; WOJSA, Kazimiera

Quantitative polarographic determination of escin and its sodium salt. Inst przem ziel Biul 8 no.4:156-161 D -'62.

1. Zaklad Analityczno-Kontrolny, Instytut Przemyslu Zielarskiego, Poznan. Kierownik: dr. J. Czlonkowska.

"APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7

Rutkowski et al.
After chemical estimation of the fraction of triglycerides in the fat, J. Janicki, A. Rutkowski and B. Dzierwinski (Institute of Animal Physiology and Biochemistry, Polish Academy of Sciences, Warsaw, Poland; Institute of Animal Physiology and Biochemistry, Polish Academy of Sciences, Warsaw, Poland; Institute of Animal Physiology and Biochemistry, Polish Academy of Sciences, Warsaw, Poland) measured the proportion of triglycerides in the fat. The proportion of triglycerides in the fat was measured by densitometry.

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001446210006-7"

RUTKOWSKI, Alojzy; RUTKOWSKI, Marian; TOMASIK, Zdzislaw

Characteristics of some Polish raw benzols. Chemia stosow A
9 no.1:111-127 '65.

1. Institute of Technology of Petroleum and Liquid Fuels of
Wroclaw Technical University. Submitted December 30, 1963.

GDR / Chemical Technology. Food Industry.

H-28

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 79321.

Author : Rutkowski, A.

Inst : Karl-Marx-Univ.

Title : The Effect of Fat Rancidity Upon the Preservation of Certain Raw Foods and Their Processed Products.

Orig Pub: Wiss Z. Karl-Marx-Univ. Leipzig, Math.-naturwiss. Reihe, 1955, 5, No 3, 327-332.

Abstract: The following products were taken as an example: swine fat, butter, vegetable oils, flour products, and it was demonstrated that even at a low fat content its decomposition causes the spoilage in a product. The preservation of fats and fat-containing products depends upon the conditions of processing the raw products and their

Card 1/2

RUTKOWSKI, Antoni; KOWALSKA, Maria

Influence of synthetic detergents on the skin. Przegl. derm., Warsz. 8 no.4:483-490 July-Aug 58.

1. Z Instytutu Przemysle Tłuszczowego Dyrektor: doc. dr inż. A. Rutkowski Z Kliniki Dermatologicznej A. M. w Warszawie Kierownik: prof. dr S. Jabłonska. Adres: Warszawa, Instytut Przemyslu Tłuszczowego, Rakowiecka 8.

(SKIN, eff. of drugs on
synthetic detergents (Pol))
(DETERGENTS, eff.
on skin (Pol))

POLAND

RUTKOWSKI, Antoni, CHUDY, Jan, BATURA, Jadwiga, and KOSKO, Irena, Chair of Food Technology and Preservation (Katedra Technologii Zywosci i Przechowalnictwa), the WSR [Wysza Szkoła Rolnicza, Higher School of Agriculture] in Olsztyn (Director: Prof. Dr. A. RUTKOWSKI)

"Fats of Fur Animals. I. Characteristics of the Fat of the Mink (*Mustela vison Schreb.*)."

Warsaw-Lublin, Medycyna Weterynaryjna, Vol 19, No 5, May 63, pp 250-254.

Abstract: [Authors' English summary] Investigations revealed that the subcutaneous fat tissue of the minks varies in composition from its fat around the kidneys and mesentery. It is considerably richer in palmitic and linoleic acids, poorer in stearic, and contains about the same percentage of myristinic acid (7 percent). The composition and easier accessibility of the subcutaneous fat offers a possibility of its utilization, primarily in the cosmetic and pharmaceutical industries. There are nine (9) references, of which 6 are Polish, 2 German, and one is English.

1/1

RUFKOWSKA, H.; RUFKOWSKI, M.

Powdered metals of hard and soft magnetic properties. Biuletyn. n.z.
WITMIK (Panstwowe Wydawnictwa Techniczne) Katowice
Vol. 21, no. 2, Feb. 1954

So. East European Accessions List Vol. 5, No. 9 September 1956

POLAND/Magnetism. - Ferrites and Ferrimagnetism.

F

Abs Jour : Ref Zhur Fizika, No 8, 1959, 18030

Author : Rutkowska, Halina

Inst :

Title : Dependence of the Properties of Barium Ferrites on
the Structure

Orig Pub : Przegl. telekomun., 1958, 31, № 8-9, 273-277

Abstract : Detailed results and microphotographs are given for the
structure of barium ferrites as a function of the heat
treatment and magnetic properties.

Card 1/1

COUNTRY :	Poland	B-5
CATEGORY :		
ABSTRACT JOUR.	RZKhim., No. 23 1959, No.	81191
AUTHOR :	Rutkowska, Halina	
TYPE :	Not given	
TITLE :	Relationship between the Structure of Barium-Ferrite Magnets and their Properties.	
ORIG. PUBL. :	Przegl. telekomun., 1958, 31, #8-9, 273-277.	
ABSTRACT :	The relationship between the properties and structure of barium ferrite magnets ($\text{BaO} \cdot 6\text{Fe}_2\text{O}_3$) was studied. $\text{BaO} \cdot 6\text{Fe}_2\text{O}_3$ structure was changed from fine to coarse-grained by increasing the temperature of roasting from 1050° to 1350° or by increasing the time of reaction from $1/2$ to 5 hours. Calcining of $\text{BaO} \cdot 6\text{Fe}_2\text{O}_3$ specimens was accomplished in N_2 , O_2 , $\text{N}_2 + \text{O}_2$ (1:1) or air atmospheres. No strict relationship between the magnetic properties and structure of $\text{BaO} \cdot 6\text{Fe}_2\text{O}_3$ was apparent.	
CARD:	L/1	-- O. Polotnyuk

RUTKOWSKA, Helena

Employment of adolescents. Gruzlica 24 no.8:881-884 Aug 56.

1. Z Centralnej Poradni Przeciwgruzliczej w Lodzi, Dyrektor:
prof. dr. J. Szustrowa.
(TUBERCULOSIS, PULMONARY, ther.
rehabil. of adolescents
(REHABILITATION, in various dis.
tuberc., pulm., in adolescents)

RUTKOWSKA, Helena

One year results of activities of a dispensary for adolescents.
Gruzlica 24 no.5:389-398 May 56.

1. Z Centralnej Poradni Przeciwgruzliczej w Łodzi. Kierownik:
prof. dr. J. Szustrowa, Łódź, ul. Moniuszki 7/9.
(TUBERCULOSIS, prevention and control,
dispensaries for adolescents (Pol))

RUTKOWSKA, Urszula

Quantitative polarographic determination of codeine phosphate
in creosote syrup. Inst przem ziel Biul 9 no. 3:94-101 S '63.

1. Zaklad Analityczno-Kontrolny, Instytut Przemyslu Zielarskiego, Poznan. Kierownik Zakladu: dr H. Czonkowska.

RUTKOWSKI, Antonin; KOZLOWSKA, Halina; CHUDY, Jan

Research on rape groats. Prum potravin 15 no. 6:283-285
Je '64.

1. Chair of Food and Canning Technology, Higher School of
Agriculture, Olsztyn, Poland.

Rutkowski, Antoni

POLAND/Chemical Technology - Chemical Products and Their
Application, Part 3. - Fats and Oils, Waxes, Soaps,
Detergents, Flotation Agents.

H-24

Abs Jour : Ref Zhur ~ Khimiya, No 7, 1958, 22867
Author : Antoni Rutkowski, Zdzislaw Makus
Inst :
Title : Influence of Technological Processes on Nourishing Value
of Vegetable Fats.
Orig Pub : Przem. spozywczy, 1957, 11, No 8, 333-337

Abstract : It is shown that the decrease of the nourishing value of
vegetable fats takes place mainly at the processes of re-
fining and solidification, therefore, these processes must
be carried out especially carefully. Parameters influen-
cing the nourishing value of vegetable fats are presented.

Card 1/1

RUTKOWSKI, A.

The institutes of the food industry in Czechoslovakia. p. 22.

(PRZEMYSŁ SPOŻYWCZY. Vol. 11, No. 1, Jan. 1957, Warszawa, Poland.)

SO: Monthly List of East European Accessions (EEAL) Lc. Vol. 6, No. 10, October 1957. Uncl.

COUNTRY	:	Poland	H-25
CATEGORY	:		
ABS. JOUR.	:	RZKhim., No. 1959, No. 72785	
AUTHOR	:	Rutkowski, A.; Makus, Z.; Stefaniuk, A.	
INST.	:		
TITLE	:	The Influence of the Degree of Maturity of Rapeseed on Stability of the Oil.	
ORIG. PUB.	:	Roczn. technol. i chem. zywn., 1957, 2, 91-99	
ABSTRACT : The investigations were conducted daily over the period from 10 to 27 July 1957, i.e., over a time interval from green stage to complete maturity of the seed. (S). Samples of collected S were purified immediately after removal from the plants. A portion of the S was used for determination of the water content; the remainder was ground in a porcelain mortar. In the resulting paste were determined the moisture content and lipase activity, which was expressed in ml 0.1 N KOH used-up to neutralize free fatty acids formed by hydrolysis of the fat, within 24 hours at 30°, per 1 g of rapeseed paste. A portion of the paste was covered with petroleum ether (boiling range 40-60°), for			
CARD: 1/3			

COUNTRY	:	Poland
CATEGORY	:	n-27
ABS. JOUR.	:	RZKhim., No. 1959, No. 72785
AUTHOR	:	
INST.	:	
TITLE	:	
ORIG. PUB.	:	
<p>ABSTRACT : subsequent determination of fat stability and content of tocopherol, which could not be done under field conditions. These determinations were carried out one month after collection of the samples. Before starting the analyses the ether was driven off in a current of CO₂. It was found that lipase activity decreased steadily with the maturation of S, and in proportion to increase of S-solids. As the S mature, notwithstanding the concurrent increase in content of unsaturated acids, the resistance of the oil to autoxidation increases, evidently due to increasing content of tocopherol acting as a natural antioxidant. A study was made of the effect of changes in lipase activity and</p>		
CARD: 2/3		

14

ORIG. PUB. :

ABSTRACT : stability of the fat, during the period of maturation of rapeseed oil. For this purpose rapeseed, collected under identical conditions, were dried to 12% moisture content and divided in three groups: fully mature S, technically mature S, and immature S. All S were then stored for 5 months at 18-20°, and relative humidity of the air of about 60%, and at regular intervals of time the S were tested for acid- and peroxide values of the fat. It was found that hydrolysis and autoxidation take place much more extensively in the immature S, in comparison with fully mature and technically mature S, which showed no particular difference between each other. -- M. Zemlyanukhina.

CARD: 3/3

Rutkowski, A.

Development of Soviet edible vegetable fats in the years 1959-1965. p. 439.

PRZEMYSŁ SPOŻYWCZY. (Stowarzyszenie Naukowo-Techniczne Inżynierów i Techników Przemysłu Spożywczego) Warszawa, Poland. Vol. 13, no. 10, 1959.

Monthly list of East European Accessions (EEAI) LC, Vol./no. 2, Feb. 1969.

Unclassified

COUNTRY	: POLAND
CATEGORY	: Chemical Technology. Chemical Products and Their Applications. Fats and Oils. Waxes.*
ABS. JOUR.	: RZKhim., No. 23 1959, No. 83713
AUTHOR	: Kwapniewski, Z.; Rutkowski, A.; Kubik, B.
PUBL.	: -
TITLE	: Effect of Paper Wrapping on the Stability Fats
ORIG. PUB.	: Przem. spozywczy, 1958, 12, No 10-12, 412-415
ABSTRACT	: Conducted were experiments pertaining to the investigation of the effect of wrapper porosity and of the presence of iron and copper in the wrapping material on the degree of self-oxidation of fatty products and of the effect of employing wrapping paper, saturated with antioxidant (A) solution. Five types of wrapping paper were investigated: parchment, semi-parchment, acidic parchment, white and brown cardboard. Paper or/and cardboard was finely
*Soaps and Detergents. Flotation Agents.	
CARD:	1/4

COUNTRY	:	H
CATEGORY	:	
ABS. JOUR.	:	RZKhim., No. 23 1959, No. 83713
AUTHOR	:	
INST.	:	
TITLE	:	
ORIG. PUP.	:	
ABSTRACT	Con'd	: pulverized into mill, employing emery wheel, followed by mixing with molten fat (F) in the proportion of 5 gr of mill per 95 gr F. The mixture was left standing in a beaker within a thermostatically controlled oven at 60° temperature. Simultaneously, a sample of F containing no paper mill was subjected to the same conditions. Periodically, the peroxide number was determined on both samples. As a measure of stability, a certain interval of time was considered during which the peroxide number of a sample reached certain
CARD:	2/4	

H - 86

COUNTRY :	H
CATEGORY :	
ABS. JOUR. :	RZKhim., No. 28 1959, No. 83713
AUTHOR :	
LIST. :	
TITLE :	
ORIG. PUB. :	
ABSTRACT :	preetermined value. It was established that the fastest rate of oxidation occurs with samples of F containing parchment and acidic parchment paper. Effect of different grades of paper on the increase of free fatty acids content was not noticed. For the purpose of revealing the effect of paper structural characteristics on the stability of F, 1 gr F, dissolved in 5 ml of petroleum ether, was placed on a piece of paper measuring 11x7.5 cm. After the evaporation of petroleum ether, paper samples (suspended on nylon threads) were exposed to
CARD:	3.4
ORIG. PUB. :	
ABSTRACT :	diffused day light at 13°- 18° temperature. The
CARD:	4/4

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F applied to white and gray cardboard, wherein the rate of F oxidation on cardboard at 13-18° was greater than that of F admixed with ground paper that was stored at 60°. This fact points to a larger negative effect resulting from the porosity of wranning. Experiment involving the application of F on paper samples, impregnated with A solution (0.01% by weight of paper) revealed the distinct effect of A on the retardation of the F oxidation process.

-- M.Zemlyanykhina

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Foods

Problem of the acid number and of the peroxide number as indexes of lard freshness. Antoni Rutkowski (Univ. Poznań, Poland). Roczniki Politechniki Poznańskiej, Seria 11, No. 1, 89-104 (1952).—The conditions were investigated in which the peroxide no. (Ley no.: ml. of 0.002*N* Na thiosulfate/g. of fat) can serve as an indication of the freshness of lard, and the obtained values were compared with the results given by the acid-no. detn., the Kreis assay, and the neutral red assay. For the expts. a freshly melted lard was used; it was stored in darkness in an open container at 60°. Samples of various water contents were prep'd. by adding the desired quantity of water to the melted lard at 40-60°. The lard was previously dehydrated to 0.05% H₂O at 100° under 10 mm. Hg pressure. The samples, solidified at 0°, were kept for 7 days in the presence of Aspergillus mold at 18-22° and then transferred into the lab. room at the same temp. The freshly slaughtered bacon was chopped and stored at 14-16° in dispersed daylight. Conclusions: (1) The acid no. is not an indication of the freshness of lard, and particularly of the changes taking place during its storage. (2) The acid no. incomplete the hydrolysis process taking place in the raw material (lipase of the tissue or of the microorganisms) or in the lard obtained from such a raw material. In a lard prep'd. from a fresh raw material an increase of the acid no. takes place in case of a microbial infection (microbic lipase). (3) The peroxide no. is the true indication of the lard freshness, its limiting value for first-quality lard being 2.0. A value >3.0 indicates a nonedible product. (4) The peroxide no. is not sufficient to det. the quality of a lard which suffered biochemical decompn. (5) The quality detn. of lard with neutral red soln. (Laskowska's method) gives a good indication of its freshness as the assay is rapid and simple.

Henry W. Lawenda

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(A)

The abdominal fats of pigs. J. Janicki, A. Rutkowski,
and J. Szyliga (Univ. Poznań, Poland). *Pz-27003-16749*
Spot. 4, 242 (1950). The pigs of total weight 100-160
kg. have 5.10-4.48% of abdominal fat tissue composed of
fat lining of the small intestine (0.69-0.56, contg. 72.2-
87.1 fat), kidneys (3.50-3.02; 83.0-81.0 fat), stomach
(0.43-0.39; 82.0-88.1 fat), pancreas (0.19-0.21; 51.0-
81.2 fat), and of the bowel (0.26-0.27; 66.4-71.0% fat).
The fats of pancreas and bowel linings (8.8% of all ab-
dominal fats) cannot be considered as edible because of
very disagreeable flavor and odor, and shall be processed
separately from edible abdominal fats. The m.p. of
the fats of the pancreas fat lining is 43.7°, of the bowel
41.8°, while the m.p. of the remaining fats is not so high.
The sapon. value of the fats of the pancreas fat lining is
170.6, of the bowel 187.8, and of the remaining fats 188.8-
192.1. The acid no. of the fats of the pancreas fat lining is
2.61 and for the remaining 0.8-1.2. The I no. of the fats
of the pancreas fat lining is 45.9 and for the remaining fats
48.1-50.1. The Rekhert-Meissl value of the fats of the
pancreas and bowel fat linings is 0.8 and the values for the
remaining are 0.53-0.66. The Polenske value of the fats of
the discussed fat linings varies from 0.43 (kidney) to 0.58
(pancreas). The measurements and analysis have been con-
ducted on two breeds of pigs processed in Poznań (Poland).
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